

ABSTRACT

In a first aspect, a substrate positioning system includes a plurality of pushers arranged in a spaced relation about a stage adapted to support a substrate. Each  
5 pusher is adapted to assume a retracted position so as to permit the substrate to be loaded onto and unloaded from the stage, extend toward an edge of the substrate that is supported by the stage, contact the edge of the substrate, and continue extending so as to cause the substrate to move  
10 relative to the stage until the substrate is calibrated to the stage. Numerous other aspects are provided.